CLARIFICATION OF NELAC PROFICIENCY TESTING (PT) REQUIREMENTS

EXECUTIVE SUMMARY

This policy defines the PT requirements that the current NELAP applicant laboratories must meet in order to be granted NELAP accreditation. The policy defines solutions to the current PT problems which include:

- Which PT analytes are required?
- What are acceptable sample designs for WP Base/Neutral and Acid standards? Do laboratories need to have acceptable results for all Aroclors contained in the NELAC PT Fields of Testing (FoT) RCRA?
- Can analytes be omitted from compliant PT standards? And if so, which standards can have analytes with assigned values of zero and how many?
- How are results, including those for analytes with assigned values of zero, to be scored?

These four issues, solutions to the issues and the impact of the solutions are described below. This policy puts forth a plan that outlines PT requirements for accrediting NELAC applicant laboratories. The policy is based on the language contained in the 1999 NELAC Standards, Chapter 2, Associated Appendices, and documents referenced by the 1999 Standards, namely the EPA National Standards for Water Proficiency Testing Studies Criteria Document (December 30, 1998) and the NELAC PT Field of Testing tables posted on the NELAC web site.

The policy was developed by the NELAC Transition and PT Committees. After review by the NELAP Accrediting Authorities Work Group the policy was approved by the NELAC Board of Directors.

Issue #1 - Required Level of Participation for NELAP applicant laboratories

Section 2.4.1 states:

> "To be accredited initially and to maintain accreditation, a laboratory shall participate in two single-blind, single-concentration PT studies, *where available*, per year for each *PT field of testing* for which it seeks or wants to maintain accreditation." (emphasis added)

Further Section 2.3.2.1 states:

> "The required group of analytes in each sample covering each field of testing shall be determined by the NELAC Standing Committee on Proficiency Testing and shall be evaluated and updated, as necessary."

Solution

All NELAC accredited laboratories must have two sets of acceptable PT results prior to award of accreditation for all analytes contained in the JUN-2000 NELAC PT Field of Testing tables posted on the NELAC web site.

Justification for Solution

The JUN-2000 NELAC PT FoT include all of the WS and WP analytes listed in the EPA National standards. The "EPA WS and WP" analytes have been widely available from accredited providers since at least July 1, 1999. There is no justifiable reason for NELAP applicant laboratories not submitting two sets of acceptable PT results for the "EPA WS and WP" analytes.

The JUN-2000 NELAC PT tables also include analytes and matrices beyond the "EPA WS and WP" analytes. Multiple NIST NVLAP accredited PT Providers, using these tables, have produced PT studies that contain all NELAC PT analytes. These studies have been widely available since July 2000 providing adequate opportunities for NELAP applicants to pass two studies for these non-"EPA WS and WP" analytes.

Impact of solution

Currently, PT results have not been summarized for all applicant laboratories. Anecdotal information indicates that most applicant laboratories will not be impacted by this solution. Most laboratories have worked hard to obtain and analyze two sets of PT standards for all analyte/matrix combinations contained in the JUN-2000 NELAC PT FoT tables. Exceptions may be laboratories that have relied on a sole provider who did not offer the additional analyte/matrix combinations beyond the "EPA WS and WP" list.

Issue #2 - Acceptable WP Base/Neutral and Acid and RCRA PCB sample designs

Section 2.3.2.1 states:

> "The PT Provider shall prepare each sample lot such that the prepared concentration of each analyte in each lot is unique. The required group of analytes covering each PT field of testing shall be determined by the NELAC Standing Committee on Proficiency Testing and shall be evaluated and updated, as necessary."

Further Section C.1.1.2 states:

> "For analytes not included in the National Standards for Water Proficiency Testing, Criteria Document, Proficiency Test providers shall use acceptance limits established by the NELAC Standing Committee on Proficiency Testing and shall be made available to PTOB/PTPA-approved PT Providers by the PT Committee Chair or the Executive Director of NELAP."

Solution

For the additional WP Base/Neutral and Acid and the RCRA PCB samples, the NELAC PT Committee using the authority in 2.3.2.1 and C.1.1.2, shall revise the appropriate NELAC PT Field of Testing tables by a) adding the following footnote regarding missing analytes to the CWA table

> "For volatile, base/neutral, acid, pesticide, and herbicide standards, providers must include a minimum number of analytes using the same criteria described in Chapter 2, Appendix B, Section B.1.2"

and b) adding the following footnote to the entry for PCBs in the RCRA table which states:

> "One sample in every study, containing one or more Arochlors, selected at random from among the Arochlors listed."

As applicable to an applicant=s Scope of Accreditation, all NELAC accredited laboratories must have two sets of acceptable WP Base/Neutral and Acid results prior to award of accreditation for all analytes listed in the JUN-2000 NELAC PT Field of Testing tables posted on the NELAC web site. For the purposes of meeting this requirement, Accrediting Authorities will accept results for WP Base/Neutral and Acid analytes with assigned values equal to zero and for analytes with assigned values >0. PT providers will score all WP Base/Neutral and Acid results as described in the solution to Issue #4 below.

For RCRA-Solid PCB Fields of Testing, all NELAC accredited laboratories must have two sets of acceptable results for each Aroclor listed in the JUN-2000 NELAC PT Field of Testing RCRA-Solid table. For an Aroclor with an assigned value >0, to receive an ACCEPTABLE evaluation, the laboratory must a) correctly identify the Aroclor and b) report a quantitative result within the Acceptance limits generated per the criteria listed in the JUN-2000 NELAC PT Field of Testing tables. For an Aroclor with an assigned value equal to zero, the PT providers shall score as ACCEPTABLE any results reported as 0, < a numeric value or any indication of not detected. All numeric results for analytes with an assigned value of zero will be scored as NOT ACCEPTABLE.

Justification for Solution

The solution is consistent with the approach taken to date and is consistent with the NELAC standards. The language for the footnotes is derived from the EPA National Standards for the PCBs and from the NELAC RCRA table for the WP Base/Neutral and Acid analytes.

Impact of solution

The solution requires the NELAP Director or the PT Committee to revise the PT tables as soon as possible. Laboratories that used PT Providers that did not include all of the NELAC analytes on their reporting sheets will need to participate in studies that include all analytes prior to being granted accreditation.

Issue #3 - Can applicant laboratories be accredited for PT analytes "left out of a standard"?

Section 2.1 states:

> "In addition to complying with the requirements of this Chapter and Appendices, any entity seeking to participate as a NELAP-designated PTOB/PTPA-approved PT Provider program shall also comply with all applicable requirements of National Standards for Water Proficiency Studies, Criteria Document, U.S. Environmental Protection Agency or other NELAC documents that define analytes, analyte numbers, concentrations, and acceptance criteria as required in Section C-1.1.2."

Further, Section B. 1.2 (PT Sample Composition for Water Matrices) states:

> "PT Providers may choose to leave one or more specific analyte(s) out of PT samples, yet may still include those analyte(s) in the PT study to be counted and scored with the present analytes. The guidelines in this section apply only to PT samples that contain analytes and matrices listed in the following NIST program designations: water supply (WS) regulated volatiles, WS unregulated volatiles, WS pesticides, WS herbicides, water pollution (WP) haloaromatics/halocarbons, and WP pesticides."

The NELAC RCRA PT FoT table (JUN-2000 versions) also contains the following footnote.

> "For volatile, base/neutral, acid, pesticide, and herbicide standards, providers must include a minimum number of analytes using the same criteria described in Chapter 2, Appendix B, Section B.1.2."

Solution

Analytes may be left out of (e.g., analytes may have an assigned value of zero) for the following standard designations contained in the NELAC PT FoT tables: water supply (WS) regulated volatiles, WS unregulated volatiles, WS pesticides, WS herbicides; water pollution (WP) haloaromatics/halocarbons, WP pesticides; RCRA volatile, base/neutral, acid, pesticide, and herbicide standards. Analytes may only be left out of standard designs that contain 11 or greater analytes. If the standard design contains 10 or fewer analytes, all analytes must be included (Ref: Section B.1.2, 1999 NELAC Standards).

Justification for Solution

All analytes must have an assigned value. The assigned values for some analytes in the fractions listed above may be zero. The zero value is directly

applicable to the EPA/NIST WS/WP analytes as described in Section B.1.2 of the 1999 NELAC standards and is also applicable to the RCRA analytes because of the footnote contained in the NELAC RCRA PT FoT table:

Impact of solution

WS analytes - no impact; all standard designs that can include analytes with assigned values equal to zero are included in the PT standard designations contained in the 1999 standards.

RCRA analytes - minimal impact; all standard designs that can include analytes with assigned values equal to zero are covered by the footnote included in the NELAC PT FoT tables except for PCBs. For a solution for the PCB issue, see Issue #2.

WP analytes - no impact for the WP haloaromatics/halocarbons, WP pesticides standards. WP herbicide standards include only four analytes and are not impacted. WP base/neutral and acid standards are potentially impacted. For a solution for the base/neutral and acid issue, see Issue #2.

Issue #4 - Evaluation of PT results

For "EPA WS and WP" analytes, Section 2.1 states:

> "In addition to complying with the requirements of this Chapter and Appendices, any entity seeking to participate as a NELAP-designated PTOB/PTPA-approved PT Provider program shall also comply with all applicable requirements of National Standards for Water Proficiency Studies, Criteria Document, U.S. Environmental Protection Agency or other NELAC documents that define analytes, analyte numbers, concentrations, and acceptance criteria as required in Section C-1.1.2."
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> For the other analytes, Section C.1.1.2 of the 1999 Standards indicate that the NELAC PT Committee or the NELAP Director may establish such criteria:
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> "For analytes not included in the National Standards for Water Proficiency Testing, Criteria Document, Proficiency Test providers shall use acceptance limits established by the NELAC Standing Committee on Proficiency Testing and shall be made available to PTOB/PTPA-approved PT Providers by the PT Committee Chair or the Executive Director of NELAP."

Solution

1. All "EPA WS and WP" analyte results submitted by NELAC applicant laboratories must be evaluated per the criteria contained in the EPA National Standards.

2. All additional NELAC analyte/matrix combination results (i.e., those for non-"EPA WS and WP" analytes) submitted by NELAC applicant laboratories for analytes with assigned values not equal to zero must be evaluated per the criteria contained in the JUN-2000 NELAC PT FoT tables.

3. For all non-"EPA WS and WP" analytes (except RCRA-Solids PCBs - see below) with an assigned value equal to zero, the PT providers shall score as ACCEPTABLE any results reported as 0, < a numeric value or any alpha indication of not detected. Examples of acceptable alpha results include but are not limited to "ND", "BDL", "Not Detected", and "Below Detection Limit". All numeric results for analytes with an assigned value of zero will be scored as NOT ACCEPTABLE.

4. RCRA-Solid PCB standards shall be evaluated as described in the solution to Issue #2.

Justification for Solution

The solution, while maintaining consistency with the requirements of the 1999 NELAC standards and the EPA National Standards, expands the criteria for results that will be evaluated as ACCEPTABLE for non-EPA WS and WP analytes with assigned values of zero. Although the language is more liberal than that contained in the EPA National Standards, it is a common sense change that does not unfairly punish the applicants and does not adversely impact the ability of the Accrediting Authorities to evaluate PT performance.

Impact of solution

The solution provides a framework for dealing with the issue of evaluating results for analytes with assigned values of zero that improves on the language presently in the EPA National Standards.